The real world data consists of 12 bit, digitized signals with values between 0 and 4095. FIG. 38 shows a typical raw signal. A raw vector consists of combined sections of four signals.

Please replace the paragraph beginning at page 69, line 9 with the following rewritten paragraph:

The results of the normalization study are summarized in FIG. 39.

Please replace the paragraph beginning at page 69, line 17 with the following rewritten paragraph:

Normalization using a fixed range retains the information contained in the relative strength of one vector compared to the next. From this it could be expected that the performance of the network trained with fixed range normalization would increase over that of the baseline method. However, without normalization, the input range is, as a rule, not from zero to the maximum value (see FIG. 39). The absolute value of the data at the input layer affects the network weight adjustment (see equations (1) and (2)). During network training, vectors with a smaller input range will affect the weights calculated for each processing element (neuron) differently than vectors that do span the full range.

Please replace the paragraph beginning at page 70, line 29 with the following rewritten paragraph:

The results of the low threshold filter study are summarized in FIG. 40.

Please replace the phrase beginning at page 73, line 1 with the following rewritten phrase:

--Appendix 2--

IN THE CLAIMS:

Please rewrite claims 1, 28, 44, 67 and 69 as follows (a marked-up version of these claims showing deletions in brackets and additions underlined is attached hereto).

1.   (Rewritten)   A vehicle including a system for determining the occupancy state of a seat in the vehicle occupied by an occupying item, the system comprising:

a plurality of transducers arranged in the vehicle, each of said transducers providing data relating to the occupancy state of the seat; and

processor means coupled to said transducers for receiving the data from said transducers and processing the data to obtain an output indicative of the current occupancy state of the seat, said processor means comprising a trained combination neural network created from a plurality of data sets, each of said

data sets representing a different occupancy state of the seat and being formed from data from said transducers while the seat is in that occupancy state,

said combination neural network producing the output indicative of the current occupancy state of the seat upon inputting a data set representing the current occupancy state of the seat and being formed from data from at least some of said transducers.

28. (Rewritten) A method of developing a system for determining the occupancy state of a seat in the vehicle occupied by at least one occupying item, comprising the steps of:

mounting transducers in the vehicle;

forming at least one database comprising multiple data sets, each of the data sets representing a different occupancy state of the seat and being formed by receiving data from the transducers while the seat is in that occupancy state, and processing the data received from the transducers;

creating a trained combination neural network from the at least one database capable of producing an output indicative of the occupancy state of the seat upon inputting a data set representing an occupancy state of the seat; and

inputting a data set representing the current occupancy state of the seat into the combination neural network to obtain the output indicative of the current occupancy state of the seat.

44. (Rewritten) A method of developing a database for use in developing a system for determining the occupancy state of a vehicle seat by an occupying item, comprising the steps of:

mounting transducers in the vehicle;

providing the seat with an initial occupancy state;

receiving data from the transducers;

processing the data from the transducers to form a data set representative of the initial occupancy state of the vehicle seat;

changing the occupancy state of the seat and repeating the data collection process to form another data set;

collecting at least 1000 data sets into a first database, each data set representing a different occupancy state of the seat;

creating a trained combination neural network from the first database which correctly identifies the occupancy state of the seat for most of the data sets in the first database;

testing the combination neural network using a second database of data sets which were not used in the creation of the combination neural network;

identifying the occupancy states in the second database which were not correctly identified by the combination neural network;

collecting new data comprising similar occupancy states to the incorrectly identified states;

combining this new data with the first database;

creating a new combination neural network based on the combined database; and

repeating this process until the desired accuracy of the combination neural network is achieved.

67.   (Rewritten)   A method of developing a system for determining the occupancy state of a vehicle seat in a passenger compartment of a vehicle, comprising the steps of:

mounting a set of transducers on the vehicle;

receiving data from the transducers;

processing the data from transducers to form a data set representative of the occupancy state of the vehicle;

forming a database comprising multiple data sets;

creating a trained combination neural network from the database capable of producing an output indicative of the occupancy state of the vehicle seat upon inputting a new data set;

developing a measure of system accuracy;

removing at least one of the transducers from the transducer set;

creating a new database containing data only from the reduced number of transducers;

creating a new combination neural network based on the new database;

testing the new combination neural network to determine the new system accuracy; and

continuing the process of removing transducers, combination neural network creation and testing until the minimum number of sensors is determined which produces a combination neural network having desired accuracy.

69.   (Rewritten)   A vehicle including a system for determining the occupancy state of a seat in the vehicle occupied by an occupying item, the system comprising:

a plurality of transducers arranged in the vehicle, each of said transducers providing data relating to the occupancy state of the seat; and